



A.D. 1833 N^o 6389.

S P E C I F I C A T I O N

OF

THOMAS HILLS THE YOUNGER.

STEAM BOILER FURNACES.

L O N D O N :

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1855.



A.D. 1833 N° 6389.

Steam Boiler Furnaces.

HILL'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, THOMAS HILLS the younger, of Saint Michael's Alley, Cornhill, in the City of London, Gentleman, send greeting.

WHEREAS His present most Excellent Majesty King William the Fourth,
5 by His Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Twenty-first day of February, in the third year of His reign, did, for Himself, His heirs and successors, give and grant unto me, the said Thomas Hills the younger, His especial licence that I, the said Thomas Hills the younger, my exors, admors, and assigns, or such others as I, the said Thomas
10 Hills the younger, my exors, admors, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of fourteen years therein expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of "A CERTAIN IMPROVEMENT IN FURNACES FOR STEAM BOILERS, AND OTHER USEFUL
15 PURPOSES;" in which said Letters Patent is contained a proviso obliging me, the said Thomas Hills the younger, by an instrument in writing under my hand and seal, particularly to describe and ascertain the nature of my said Invention, and in what manner the same is to be performed, and to cause the same to be enrolled in His said Majesty's High Court of Chancery within six
20 calendar months next and immediately after the date of the said recited Letters Patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said Thomas Hills the younger, do hereby declare the nature of my said Invention

Hill's Improvements in Steam Boiler Furnaces.

to consist in causing what is commonly called the apron plate or dead plate in furnaces, to be kept heated as uniformly as may be to a red heat, by means of heat applied to the under surface of it, so that coals thrown on it when so heated may be rapidly decomposed and deprived of their inflammable gas before they are pushed forward on to the furnace bars. And in further compliance with 5 the said proviso, I, the said Thomas Hills the younger, do hereby describe the manner in which my said Invention is to be performed, by the following description thereof, reference being had to the Drawing annexed, and to the figures and letters marked thereon (that is to say):—

DESCRIPTION OF THE DRAWING.

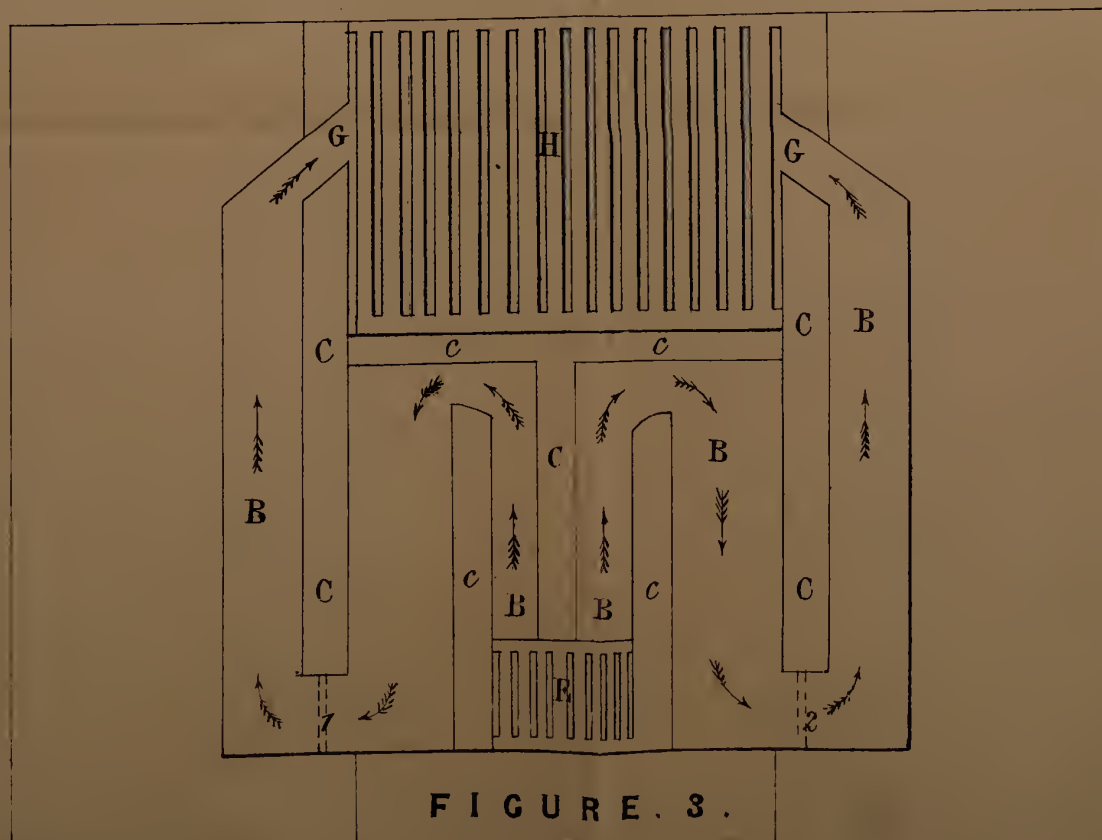
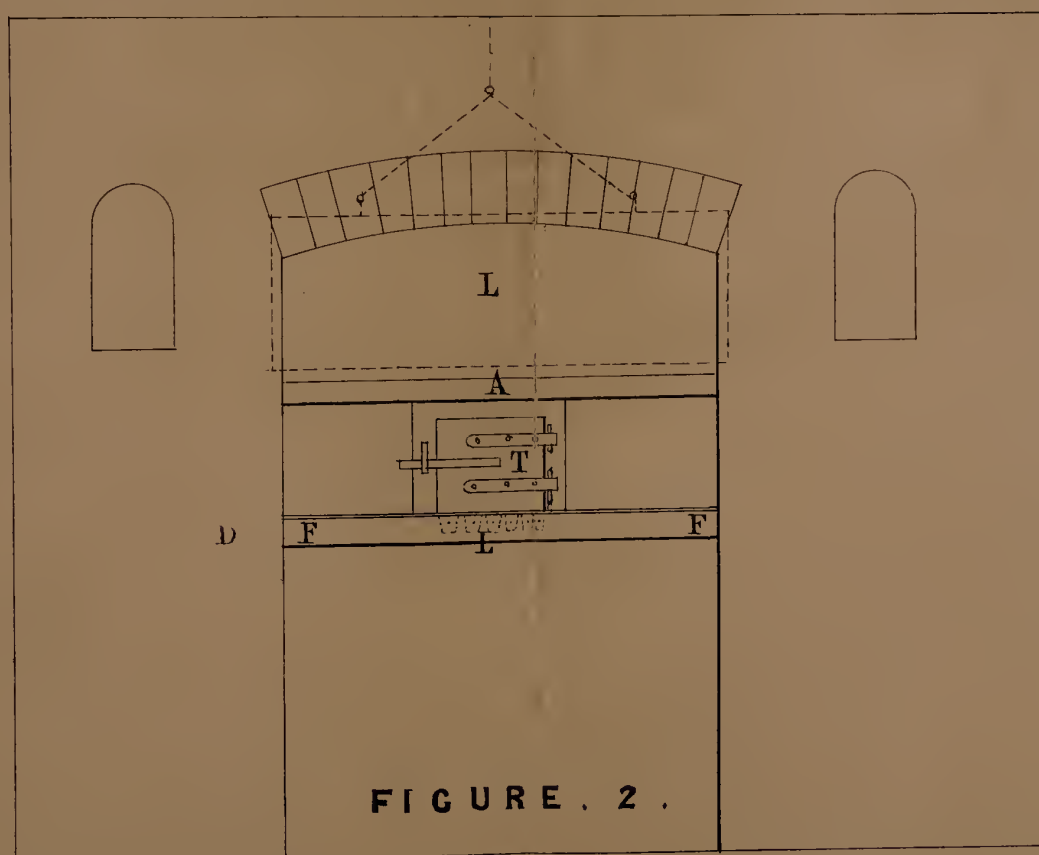
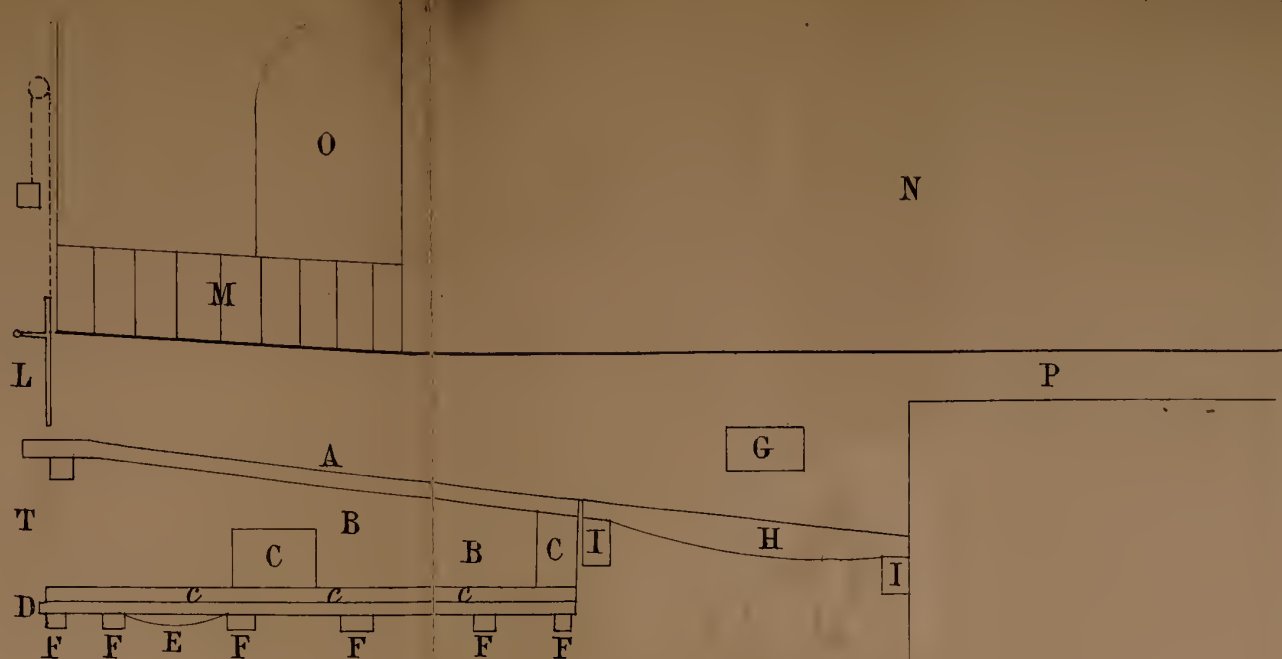
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Figure 1 represents my said improvement in section, and the mode of heating the apron plate. A is the apron plate; B, B, side flues for the smoke from the fire under the apron plate to escape by; C, C, C, C, C, brickwork forming the side end and bottom of the said flues; D, the foundation plate on which the said brickwork is raised; E, fire bars for the fire under the apron plate; 15 F, F, F, F, F, F, support bars for the said fire bars and the foundation plate; H, the ordinary furnace fire bars; I, I, the bearing bars for the same; G, the end of the flue B, B, which opens at this point over the fire on the furnace bars, which further decomposes the smoke before it is carried into the main boiler flue P, O, which is the ordinary flue passing under and round the boiler. 20 N is the boiler, and M is a brick arch thrown over the apron plate; L is a slide door for the furnace.

Figure 2 is a front elevation of my said Invention, T being the door of the fireplace under the apron plate; and similar letters being used to denote similar parts in all the Figures, no further description of this Figure will be necessary. 25

Figure 3 is a plan of my said Invention, with the apron plate removed in order to show the course of the flues marked B, the line of draft being marked by arrows. These flues may be furnished with dampers, if thought desirable, as shown at numbers 1, 2, in this Figure. It should be here observed, that instead of placing the coals on the apron plate they may be laid in flat 30 shallow iron troughs placed upon bearers let into the side walls, and having a fire under each trough.

In order to put my said Invention into practice, the fire under the apron plate being lighted, and the plate heated to a red heat, fresh coal should from time to time be spread, about four inches thick, upon the apron plate, and 35 when the inflammable gas has all been evolved from the portion of coals on the apron plate, the coke or residuum should be pushed forward upon the ordinary furnace bars to constitute the ordinary boiler furnace fire, while a fresh layer of coal should be placed on the apron plate.



The enrolled drawing is partly colored:

Drawn on Stone by Malby & Sons

Hill's Improvements in Steam Boiler Furnaces.

Now whereas I claim as my Invention and improvement the heating of the apron or dead plate in furnaces, in manner herein-before described, to a red or such other heat, while the fuel is upon it, as will cause the said fuel to give out its inflammable gasses, and form coke previously to its being pushed
 5 on to the ordinary furnace bars ; and such my Invention being, to the best of my knowledge and belief, entirely new, and never before used within that part of His said Majesty's United Kingdom of Great Britain and Ireland called England, His said Dominion of Wales, or Town of Berwick-upon-Tweed, I do hereby declare this to be my Specification of the same, and that I do verily
 10 believe this my said Specification doth comply in all respects fully, and without reserve or disguise, with the proviso in the said herein-before in part recited Letters Patent contained ; wherefore I do hereby claim to maintain exclusive right and privilege to my said Invention.

In witness whereof, I, the said Thomas Hills, have hereunto set my hand
 15 and seal, the Twentieth day of August, in the year of our Lord One thousand eight hundred and thirty-three.

THOMAS (L.S.) HILLS, JUN^r.

Signed, sealed, and delivered by the within-
 named Thomas Hills the younger, (being
 20 first duly stamped) in the presence of

THOMAS HORNBY, Solicitor,
 31, St. Swithin's Lane, London.
 HENRY BATT, his Clerk.

AND BE IT REMEMBERED, that on the Twentieth day of August, in the
 25 year of our Lord 1833, the aforesaid Thomas Hills the younger came before our said Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose.

30 Inrolled the Twentieth day of August, in the year of our Lord One thousand eight hundred and thirty-three.

LONDON :

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 Printers to the Queen's most Excellent Majesty. 1855.

